1.   A method of using a back-end network management application that supports a predetermined protocol to manage, over a network, network-enabled embedded devices that support different protocols, the method comprising the following steps:

(a)   detecting format information for one of said network-enabled embedded devices coupled to said network;

(b)   collecting information from said network-enabled embedded device over said network;

(c)   converting information collected at step (b) into a format complying with said predetermined protocol; and

(d)   passing said converted information to an application running under an environment in compliance with said predetermined protocol.

2.   A method of using a back-end network management application that supports a predetermined protocol to manage, over a network, embedded devices that support different protocols, the method comprising the following steps:

(a)   modeling each of said embedded devices into device class, device instance, and/or device method;

(b)   collecting information from each of said embedded devices; and

(c)   converting information collected at step (b) into a format complying with a predetermined protocol supported by said back-end network management application according to device class, device instance, and device method modeled for each of said embedded devices.

3.   The method of claim 2, further comprising:

(d)   passing information converted at step (c) to an application running under an environment in compliance with said predetermined protocol.

4.　　The method of claim 3, wherein:

step (a) further includes defining services according to device class, device instance, and device method modeled for each of said embedded devices.

5

5.　　For use with a device management server associated with a plurality of management applications, a method of managing networked devices over a network using the management applications, the method comprising the following steps:

10　　　　(a)　　detecting format information for one of said devices coupled to said network;

　　　　(b)　　collecting information from said device over said network;

　　　　(c)　　selecting one of said management applications to manage said device;

15　　　　(d)　　converting information collected at step (b) into a format complying with a protocol supported by the management application selected at step (c); and

　　　　(e)　　communicating with said device over set network using said selected management application and a predetermined protocol to manage 20　　said device.

6.　　For use with a device management server associated with a plurality of management applications, a method of managing networked devices over a network using the management applications, the method 25　　comprising the following steps:

　　　　(a)　　detecting format information for one of said devices coupled to said network;

　　　　(b)　　collecting information from said device over said network;

　　　　(c)　　selecting one of said management applications to manage said 30　　device;

(d)   converting information collected at step (b) into a format complying with a protocol supported by the management application selected at step (c); and

(e)   managing the network device using the selected management
5   application that support a predetermined protocol.

7.   The method of claim 6, further comprising a step of communicating over said network with said devices controlled by the management applications supporting different protocols.

10

8.   The method of claim 6, further comprising a step of communicating over said network with said devices controllable using by different protocols.

15   9.   The method of claim 6, further comprising a step of using said device management server to modify appearance of said device to said management applications.

10.   The method of claim 6, further comprising caching collected
20   information for said device.

11.   The method of claim 6, further comprising a step of providing access control to said device.

25   12.   The method of claim 6, further comprising a step of polling event information for said device.

13.   The method of claim 6, further comprising:
providing virtual devices;
30   providing a user-accessible graphical user interface to select a construction configuration of a view of said virtual devices; and

presenting at least one view of said virtual devices selected from a group consisting of (i) a summary view, and (ii) an aggregate view.

14. The method of claim 6, wherein:

said device management server is scalable to multiple physical machines such that communication can occur with network devices hosted in different hosts; and

said scaling includes at least one of (i) vertical partitioning in which different device instances are supported by different machines, and (ii) horizontal partitioning in which different actors operate on a common device in series and are supported by different machines; and

wherein said scaling accommodates at least one number of devices (Device Instances), rate at which devices communicate with said device management server, amount of data devices exchange with said device management server, number of device types (Device Classes), complexity of a device type (number of Device Methods), number of export modules, number of management applications, rate at which management applications communicate with said device management server, number of services, number of devices a service accesses, computational requirements of services, and memory requirements of services.

15. The method of claim 6, further comprising providing a console to facilitate monitoring said devices and said management server.

16. The method of claim 6, wherein a plurality of said management servers is deployed to manage said devices.

17. The method of claim 16, wherein various of said plurality of management servers are controllable by different users.

18. The method of claim 6, wherein at least one said protocol is selected from a group consisting of (i) SNMP, (ii) Upnp, (iii) Jini in which a

networked device is already object oriented, and (iv) Java RMI in which a networked device is already object oriented.

19. The method of claim 6, further including providing archiving for
5   said device.

20. The method of claim 6, further including a step of providing event filtering for said device.

10

15

20

25

30